

CANTILEVER AND STRADDLE X-RAY TUBE CONFIGURATIONS FOR A ROTATING ANODE WITH VACUUM TRANSITION CHAMBERS

Abstract

An imaging tube assembly (11) for a computed tomography (CT) system (10) includes an insert (60) that has a vacuum chamber (72). An anode (58) resides within the vacuum chamber (72) and rotates on a shaft (66) via one or more bearing (70). In one embodiment, a seal (52) resides between the insert (60) and the shaft (66). The seal (52) prevents the passage of a gas (80) into the vacuum chamber (72). In another embodiment, a pressure transition chamber (104) is coupled to an insert (60") and a shaft (66"). The pressure transition chamber (104) has an associated middle fluid pressure that is between an internal fluid pressure of the vacuum chamber (104) and an external fluid pressure of said insert (60").